REMARKS

Claims 1, 4-8, 10, 51-55, 70 and 72 are pending in the present application. The sole issue maintained in the outstanding Office Action is the rejection of all pending claims under 35 U.S.C. §§ 101 and 112, first paragraph (enablement). Office Action at pages 2-4. In response, Applicants traverse.

In the Office Action, the Examiner supported the rejection of all claims under § 101 by initially asserting that the burden of proof is on the Applicants and the Examiner need not identify a reason to question the truth of the statement of utility. *See* Office Action at page 3. The Examiner asserted that use of the claimed subject matter as a marker for metastasized testicular cancer cells was not useful in view of detectable expression in pancreas and two carcinoma cells lines. *Id.* at page 6. Further, the Examiner asserted that Applicants admitted ignorance as to whether testicular cells may be found in an area of the body other than the testis. *Id.* at page 4. In addition, the Examiner maintained that the asserted utility of the claimed subject matter as a marker for testicular cancer cell metastasis was neither specific nor substantial. The Examiner also took the position that use of the claimed products as subjects for further research did not establish patentable utility, drawing a direct analogy to the facts at issue in *Brenner v. Manson*, 148 U.S.P.Q. 689 (1966). Finally, the Examiner relied on M.P.E.P. § 2138.05, a provision relating to reductions of inventions to practice in an interference context, to support the argument that Applicants failed to establish a practical utility as of the filing date of the application. Applicants address each of the Examiner's arguments in the following remarks.

The Examiner erred as a matter of law in dismissing Applicants' point that the Examiner must provide a reasoned basis for questioning the truth of Applicants' statement of utility for the claimed products as markers for testicular cancer cell metastasis. The Examiner asserted that Applicants, not the Examiner, bore the burden of proof. Applicants, however, have no burden unless the Examiner provides a *prima facie* showing of a lack of utility under § 101. Applicants' position is that the Examiner has not provided that *prima facie* showing of a lack of utility, i.e., a showing sufficient to establish that one of skill in the art would be more likely than not to question the truth of the utility as markers for metastasized testicular cancer cells. More particularly, M.P.E.P. § 2107.02 (IV) provides, in pertinent part:

"IV. INITIAL BURDEN IS ON THE OFFICE TO ESTABLISH A *PRIMA FACIE* CASE AND PROVIDE EVIDENTIARY SUPPORT THEREOF

> To properly reject a claimed invention under 35 U.S.C. 101, the Office must (A) make a *prima facie* showing that the claimed invention lacks utility, and (B) provide a sufficient evidentiary basis for factual assumptions relied upon in establishing the *prima facie* showing." M.P.E.P. § 2107.02 (IV) (emphases in original).

M.P.E.P. § 2107.02 (IV) expressly provides that the Office must make a *prima facie* showing of a lack of utility and Applicants continue to vigorously assert that the Examiner has not made that required *prima facie* showing.

To establish a *prima facie* showing of lack of utility, the Examiner must establish that there is no specific, substantial and credible utility asserted in the application or well-established in the art. M.P.E.P. § 2107.01. As expressly stated therein, a "specific utility" is *specific* to the subject matter claimed. This contrasts with a *general* utility that would be applicable to the broad class of the invention." *Id.* (emphases in original). The Examiner has asserted that the use of the claimed molecules as markers for testicular cancer cell metastasis is not specific because

> "All human proteins can invariably be classified into two categories, those that are expressed in a tissue or developmentally specific manner and those that are expressed ubiquitously. It can be alleged that any protein that is expressed in a tissue specific manner can be employed to detect the tissue in which it is expressed in a sample. Alternately, a human protein, which is expressed ubiquitously can be employed to detect the presence of any human tissue in a sample. Such utilities are analogous to the assertion that a particular protein can be employed as a molecular weight marker, which is neither a specific or substantial utility." Office Action at pages 4-5.

As mandated by M.P.E.P. § 2107.01, it is the asserted or well-established utility that must be specific. The Examiner has mischaracterized that utility in generalizing it to an example of a protein detecting the tissue in which it is expressed. To refocus the inquiry, at issue is the specificity of the use of the claimed subject matter as a specific marker

for metastasized testicular cancer cells. This is not an assertion of a general utility that would be applicable to all members of the broad class of the invention, such as all nucleic acids, all proteins, or all biomolecules (i.e., nucleic acids and proteins). Rather, tracking the language of M.P.E.P. § 2107.01, products useful as markers for testicular cancer cell metastasis contrasts with a *general* utility applicable to the broad class of the invention, i.e., an assertion of utility as a marker for testicular cancer cell metastasis contrasts with an assertion of a general utility for any biomolecule as a marker for the tissue in which that biomolecule is expressed. Applicants emphasize that this latter statement is an impermissible generalization of the specific utility of the claimed subject matter as a marker for testicular cancer cell metastasis. For these reasons, Applicants continue to assert that the utility as a marker for testicular cancer cell metastasis is a specific utility and the Examiner's counter-argument is flawed in impermissibly generalizing the asserted utility.

M.P.E.P. § 2107.01 also provides guidance in assessing whether an asserted or well-established utility is a substantial utility. "A 'substantial utility' defines a 'real world' use. Utilities that require or constitute carrying out further research to identify or reasonably confirm a 'real world' context of use are not substantial utilities." The present application discloses that agp-96614-a1 was predominantly expressed in human testis at page 112, lines 13-15 of the application-as-filed, and the Examiner has acknowledged that fact (*see* Office Action at page 6). On that same page of the Office Action, the Examiner asserted that this information was not useful because of a disclosure that the nucleic acid was also expressed in the pancreas and in two carcinoma cell lines. *See* application, at page 112, lines 15-17. The expression in pancreas and carcinoma cell lines, however, was determined using the sensitive technique of PCR. In contrast, the statement in the application that expression was predominantly found in human testis was based on Northern blot data. The two statements regarding expression are not inconsistent – there is a detectable level of expression in pancreas (and in two *ex vivo* cell lines), but the predominant expression is found in human testis. The predominant expression in human testis provides a distinguishably detectable level of expression in testis, regardless of any expression in pancreas or carcinoma cell lines. Detection of expression at the predominant level characteristic of testis is not obscured or frustrated by detection of lower expression levels in other cells. Thus, the Examiner's

reliance on expression in pancreas and two cell lines to undermine the predominant expression in human testis is misplaced.

The Examiner also asserted that the disclosure of predominant expression in human testis was not useful because "one has no idea of whether the nucleic acid is differentially expressed in testis cells in a disease condition relative to normal testis cells." Office Action at page 6. As noted in prior responses, however, the assertion of utility as a marker for metastasized testicular cancer cells is not dependent on a differential level of expression in cancerous *versus* healthy cells of the testis. The marker identifies a testicular cell. Identification of such a cell in a body location other than in the testis would be recognized by one of ordinary skill in the art as the identification of a cancerous testicular cell that had metastasized. The asserted utility simply does not require a detectable difference in expression in cancerous *versus* healthy testicular cells and there is, therefore, no need for comparative studies of cancerous and healthy testicular cells to support that utility.

Based on the flawed premise that a showing of utility required a differential expression level in cancerous *versus* healthy testicular cells, the Examiner relied on M.P.E.P. § 2138.05, a provision relating to reduction to practice in assessing dates of invention for purposes of interference proceedings. Following a lengthy quote of that section of the M.P.E.P., the Examiner summarily concluded that Applicants failed to establish a practical utility. Notwithstanding Applicants' confusion over the Examiner's reliance on this provision, Applicants note that this section of the M.P.E.P. does not stand for the proposition that a probable utility cannot be a patentable utility. The provision acknowledges *Nelson v. Bowler*, 206 U.S.P.Q. 881, 885 (C.C.P.A. 1980) (a reasonable correlation between observed properties and suggested uses is sufficient for an actual reduction to practice) and expressly states that a probable utility may not be sufficient to establish utility. More importantly, use of the claimed subject matter as a marker for testicular cells, including metastasized testicular cancer cells, is not a probable utility analogous to the chemical intermediates of suspected, but unproven, function that are addressed in M.P.E.P. § 2138.05. The subject matter of the present claims has been shown to have a function as a marker for human testis, including metastasized testicular cancer cells, due to predominant expression therein.

In view of the preceding remarks, Applicants submit that a predominant expression in human testis provides a scientific basis for using the claimed subject matter as a marker for metastasized testicular cancer cells, regardless of any lesser expression levels in other cell types. Further, that assertion of a real-world utility is not undermined by the absence of any comparative data measuring expression levels in cancerous *versus* healthy testicular cells because the utility of the claimed subject matter as a marker for metastasized testicular cancer cells does not depend on a detectably different level of expression from healthy testicular cells. Accordingly, the Examiner has failed to provide a *prima facie* showing that the utility is not a substantial, or real-world, utility.

Under the law, a patentable utility must be credible in addition to being specific and substantial. The Examiner continues to rely upon a statement by Applicants rather than provide any evidence or scientific reasoning to establish that one of skill would be more likely than not to doubt the asserted utility. That statement, as highlighted in the Office Action at page 3, follows: "**If such a cell is found in an area of the body other than the testis**, the only scientifically reasonable basis for the presence of a testis cell in an abnormal location of a body is metastasis of a cancerous testis cell." Based on this statement, the Examiner concludes that "Applicants have admitted on the record . . . that they do not know whether 'such a cell is found in an area of the body other than the testis'." *Id.* at page 4. Applicants reiterate, and establish for the record, that no such admission was made. The quoted statement highlighted by the Examiner is a logical statement of cause and effect, with the cause being testicular cancer cell metastasis and the effect being testicular cells found in unnatural locations in a body. To construe the highlighted statement as some form of admission that testicular cancer cells are not known to metastasize is diametrically opposed to the truth, a well-established fact in the art that cancerous testicular cells do metastasize. Applicants attach as Appendix A hereto a copy of Kinkade, S., Amer. Fam. Phys.59:2539-2548, 2542 (1999) ("Testicular tumors metastasize via the lymphatic system . . . ."), as evidence of the state of the art with respect to testicular cancer cell metastasis. (The attached cop of Kinkade, obtained electronically, is paginated 1-10, with the relevant passage at page 4.) Thus, the Examiner misplaced reliance on an asserted admission by Applicants with regard to the capacity of testicular cancer cells to metastasize. No such admission was ever made and the record has been clarified accordingly. The Examiner has not provided any

other evidence or reasoning to establish that the utility of the claimed subject matter as a marker for metastasized testicular cancer cells lacks credibility. Accordingly, the Examiner has failed to provide a *prima facie* showing that this utility lacked credibility.

For all of the foregoing reasons, the Examiner has not established a *prima facie* showing that the use of the claimed subject matter as a marker for metastasized testicular cancer cells is not specific, is not substantial or lacks credibility. Accordingly, the rejection of all pending claims under 35 U.S.C. § 101 for an asserted lack of utility should be withdrawn.

The Examiner also rejected all pending claims under 35 U.S.C. § 112, first paragraph, for lack of enablement based on the asserted lack of utility. Office Action at page 7. The basis for the rejection is defective in relying on an asserted lack of patentable utility, as established above. For that reason, the rejection of all pending claims under 35 U.S.C. § 112, first paragraph, for lack of enablement, has been overcome and should be withdrawn.

In view of the preceding remarks, Applicants submit that the pending claims are in condition for allowance.

Dated: September 12, 2005

Respectfully submitted,

By 

William K. Merkel
Registration No.: 40,725
MARSHALL, GERSTEIN & BORUN LLP
233 S. Wacker Drive, Suite 6300
Sears Tower
Chicago, Illinois 60606-6357
(312) 474-6300
Attorney for Applicant